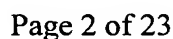


Listing of Claims:

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R^{10} , R^{11} and R^{12} are independently selected from the group: H, C_1 - C_{10} alkyl substituted with 0-5 R^{17} , C_2 - C_{10} alkenyl substituted with 0-5 R^{17} and aryl substituted with 0-3 R^{17} ;

R^{13} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, CH_2OR^{18} , CH_3 and $NHC(=S)NHR^{18}$;

R^{14} , R^{15} and R^{16} are independently selected from the group: hydrogen, C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

or, alternatively, two R^{14} or R^{15} and R^{16} may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$ and $NHC(=S)NHR^{18}$; and

R^{18} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl and phenyl;

~~with the proviso that when said compound is of formula (I) and X is $P(=O)R^9$, A is not CH_2 .~~

2. (Currently amended) A compound of Claim 1, wherein:

~~X is selected from the group: NR^8 , PR^9 and $P(=O)R^9$;~~

~~A is CH_2 ;~~

~~R^8 is selected from the group: OR^{14} , $C(=O)R^{14}$ and $S(=O)_2R^{14}$; and~~

~~R^9 is $CH_2NR^{15}R^{16}$.~~

3. (Currently amended) A compound of Claim 1 ~~2~~ of formula (II), wherein:

X is $P(=O)OH$;

~~A is CH_2 ;~~

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n-$, wherein: n is 2 or 3;

R^{11} and R^{12} are independently selected from the group: H, C_1 - C_5 alkyl substituted with 0-3 R^{17} and aryl substituted with 0-1 R^{17} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$ and $NHC(=S)NHR^{18}$; and

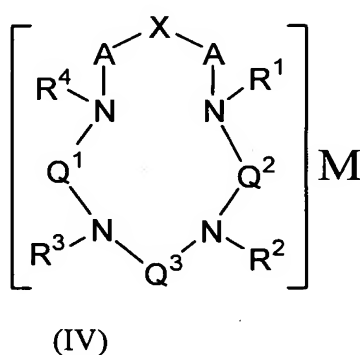
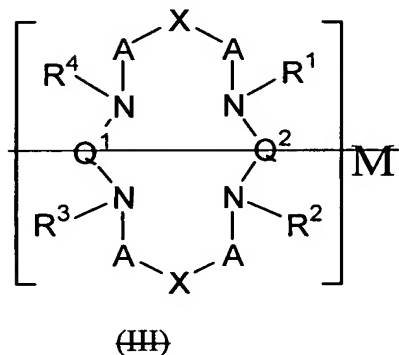
R^{18} is independently selected at each occurrence from the group: H and C_1 - C_3 alkyl.

4. (Original) A compound of Claim 3, wherein:

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from the group: H, CH_2COOH , $CH_2PO_3H_2$ and CH_2 -heterocycle substituted with 0-3 R^{13} ; and

R^{13} is independently selected at each occurrence from the group: H, OH, NH_2 , $COOH$, PO_3H_2 , CH_2OH , CH_3 and SO_3H .

5. A radiopharmaceutical of ~~formulae (III) or~~ formula (IV):



and pharmaceutically acceptable salts thereof, wherein:

M is selected from the group: ^{64}Cu , ^{67}Cu , ^{67}Ga , ^{68}Ga , ^{99m}Tc , ^{111}In , ^{90}Y , ^{149}Pr , ^{153}Sm , ^{159}Gd , ^{166}Ho , ^{169}Yb , ^{177}Lu , ^{186}Re and ^{188}Re ;

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from: C_1 - C_{10} alkyl substituted with 0-5 R^5 , C_2 - C_{10} alkenyl substituted with 0-5 R^5 and aryl substituted with 0-5 R^5 ;

R^5 is independently elected at each occurrence from: H, $C(=O)OR^{18}$, $C(=O)OR^{23}$, C_1-C_{10} alkyl substituted with 0-5 R^{13} , C_2-C_{10} alkenyl substituted with 0-5 R^{13} , aryl substituted with 0-5 R^{13} and heterocycle substituted with 0-5 R^{13} ;

X is ~~selected from the group: BR^6R^7 , $C(=O)$, SiR^6R^7 , GeR^6R^7 , SnR^6R^7 , NR^8 , PR^9 , $P(=O)R^9$, $P(=S)R^9$, AsR^9 and $As(=O)R^9$;~~

A is ~~selected from the group: CH_2 , NR^{10} and O;~~

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n$, wherein: n is 2-5;

~~R^6 and R^7 are independently selected from the group: C_1-C_{10} alkyl substituted with 0-5 R^{13} , C_2-C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;~~

~~or alternatively, R^6 and R^7 may be taken together to form a transannular bridge, said bridge selected from the group: C_3-C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;~~

~~R^8 is selected from the group: OR^{23} , OR^{14} , $C(=O)R^{14}$, $S(=O)_2R^{14}$ and $P(=O)(OR^{14})$;~~

R^9 is selected from the group: OR^{14} , $NR^{15}R^{16}$ and $CH_2NR^{15}R^{16}$;

R^{10} , R^{11} and R^{12} are independently selected from the group: H, C_1-C_{10} alkyl substituted with 0-5 R^{17} , C_2-C_{10} alkenyl substituted with 0-5 R^{17} and aryl substituted with 0-3 R^{17} ;

R^{13} is independently selected at each occurrence from the group: H, OH, OR^{23} , NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $OC(=O)OR^{23}$, $C(=O)OR^{18}$, $C(=O)OR^{23}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, $PO_3R^{18}R^{23}$, SR^{18} , SR^{23} , SOR^{18} , SO_2R^{18} , SOR^{23} , SO_2R^{23} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, CH_2OR^{18} , CH_2OR^{23} , CH_3 and $NHC(=S)NHR^{18}$;

R^{14} , R^{15} and R^{16} are independently selected from the group: C_1-C_{10} alkyl substituted with 0-5 R^{13} , C_2-C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

or, alternatively, two R^{14} or R^{15} and R^{16} may be taken together to form a transannular bridge, said bridge selected from the group: C_3-C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$ and $NHC(=S)NHR^{18}$;

R^{18} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl and phenyl; and

R^{23} is a bond to the metal M;

~~with the proviso that when said radiopharmaceutical is of formula (III) and X is $P(=O)R^9$, A is not CH_2 .~~

6. (Currently amended) A radiopharmaceutical of Claim 5, wherein:

~~X is selected from the group: NR^8 , PR^9 and $P(=O)R^9$;~~

~~A is CH_2 ;~~

~~R^8 is selected from the group: OR^{23} , OR^{14} , $C(=O)R^{14}$ and $S(=O)_2R^{14}$; and~~

~~R^9 is $CH_2NR^{15}R^{16}$.~~

7. (Currently amended) A radiopharmaceutical of Claim 5 ~~6~~ of formula (IV),
wherein:

X is $P(=O)OH$;

~~A is CH_2 ;~~

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n$, wherein: n is 2 or 3;

R^{11} and R^{12} are independently selected from the group: H, C_1 - C_5 alkyl substituted with 0-3 R^{17} and aryl substituted with 0-1 R^{17} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$ and $NHC(=S)NHR^{18}$; and

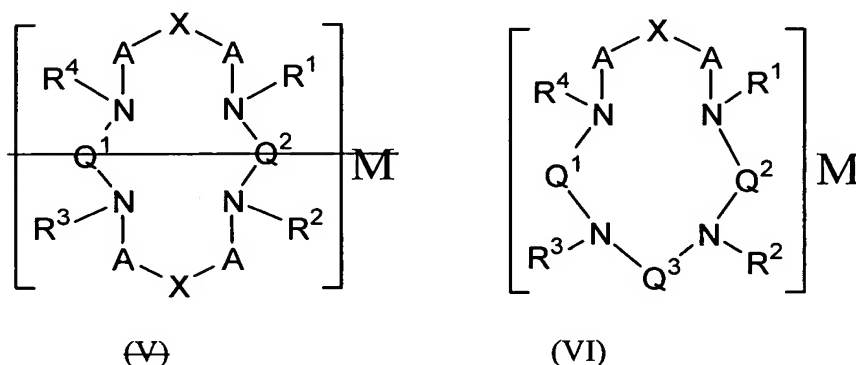
R^{18} is independently selected at each occurrence from the group: H and C_1 - C_3 alkyl.

8. (Original) A radiopharmaceutical of Claim 7, wherein:

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from the group: H, CH_2COOH , $CH_2PO_3H_2$ and CH_2 -heterocycle substituted with 0-3 R^{13} ; and

R^{13} is independently selected at each occurrence from the group: H, OR^{23} , $OC(=O)OR^{23}$, $C(=O)OR^{23}$, $PO_3R^{18R^{23}}$, SR^{23} , SOR^{23} , SO_2R^{23} , CH_2OR^{23} , OH, NH_2 , $COOH$, PO_3H_2 , CH_2OH , CH_3 and SO_3H .

9. (Currently amended) A MRI contrast agent of ~~the formulae (V) or~~ formula (VI):



and pharmaceutically acceptable salts thereof, wherein:

M is a paramagnetic metal ion of atomic number selected from the group: 21-29, 42-44 and 58-70;

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from: C_1 - C_{10} alkyl substituted with 0-5 R^5 , C_2 - C_{10} alkenyl substituted with 0-5 R^5 and aryl substituted with 0-5 R^5 ;

R^5 is independently elected at each occurrence from: H, $C(=O)OR^{18}$, $C(=O)OR^{23}$, C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} , aryl substituted with 0-5 R^{13} and heterocycle substituted with 0-5 R^{13} ;

X is selected from the group: ~~BR^6R^7 , $C(=O)$, SiR^6R^7 , GeR^6R^7 , SnR^6R^7 , NR^8 , PR^9 , $P(=O)R^9$, $P(=S)R^9$, AsR^9 and $As(=O)R^9$;~~

A is ~~selected from the group:~~ CH_2 , NR^{10} and O ;

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n^-$, wherein: n is 2-5;

~~R^6 and R^7 are independently selected from the group: C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;~~

~~or alternatively, R⁶ and R⁷ may be taken together to form a transannular bridge, said bridge selected from the group: C₃-C₁₀ alkyl substituted with 0-5 R¹³ and ortho-aryl substituted with 0-3 R¹³;~~

~~R⁸ is selected from the group: OR²³, OR¹⁴, C(=O)R¹⁴, S(=O)₂R¹⁴ and P(=O)(OR¹⁴);~~

R⁹ is selected from the group: OR¹⁴, NR¹⁵R¹⁶ and CH₂NR¹⁵R¹⁶;

R¹⁰, R¹¹ and R¹² are independently selected from the group: H, C₁-C₁₀ alkyl substituted with 0-5 R¹⁷, C₂-C₁₀ alkenyl substituted with 0-5 R¹⁷ and aryl substituted with 0-3 R¹⁷;

R¹³ is independently selected at each occurrence from the group: H, OH, OR²³, NHR¹⁸, C(=O)R¹⁸, OC(=O)R¹⁸, OC(=O)OR¹⁸, OC(=O)OR²³, C(=O)OR¹⁸, C(=O)OR²³, C(=O)NR₂¹⁸, PO₃R₂¹⁸, PO₃R¹⁸R²³, SR¹⁸, SR²³, SOR¹⁸, SO₂R¹⁸, SOR²³, SO₂R²³, NHC(=O)R¹⁸, NHC(=O)NHR¹⁸, CH₂OR¹⁸, CH₂OR²³, CH₃ and NHC(=S)NHR¹⁸;

R¹⁴, R¹⁵ and R¹⁶ are independently selected from the group: C₁-C₁₀ alkyl substituted with 0-5 R¹³, C₂-C₁₀ alkenyl substituted with 0-5 R¹³ and aryl substituted with 0-5 R¹³;

or, alternatively, two R¹⁴ or R¹⁵ and R¹⁶ may be taken together to form a transannular bridge, said bridge selected from the group: C₃-C₁₀ alkyl substituted with 0-5 R¹³ and ortho-aryl substituted with 0-3 R¹³;

R¹⁷ is independently selected at each occurrence from the group: H, OH, NHR¹⁸, C(=O)R¹⁸, OC(=O)R¹⁸, OC(=O)OR¹⁸, C(=O)OR¹⁸, C(=O)NR₂¹⁸, PO₃R₂¹⁸, SR¹⁸, SOR¹⁸, SO₂R¹⁸, NHC(=O)R¹⁸, NHC(=O)NHR¹⁸ and NHC(=S)NHR¹⁸;

R¹⁸ is independently selected at each occurrence from the group: H, C₁-C₆ alkyl, benzyl and phenyl; and

R²³ is a bond to the metal M;

~~with the proviso that when said MRI contrast agent is of formula (V) and X is P(=O)R⁹, A is not CH₂.~~

10. (Currently amended) A MRI contrast agent of Claim 9, wherein:

~~X is selected from the group: NR⁸, PR⁹ and P(=O)R⁹;~~

~~A is CH₂;~~

~~R⁸ is selected from the group: OR²³, OR¹⁴, C(=O)R¹⁴ and S(=O)₂R¹⁴; and~~

~~R⁹ is CH₂NR¹⁵R¹⁶.~~

11. (Currently amended) A MRI contrast agent of Claim 9 ~~10 of formula (VI)~~,
wherein:

X is P(=O)OH;

~~A is CH₂;~~

Q¹, Q², and Q³ are independently -(CR¹¹R¹²)_n, wherein: n is 2 or 3;

R¹¹ and R¹² are independently selected from the group: H, C₁-C₅ alkyl substituted with 0-3 R¹⁷ and aryl substituted with 0-1 R¹⁷;

R¹⁷ is independently selected at each occurrence from the group: H, OH, NHR¹⁸, C(=O)R¹⁸, OC(=O)R¹⁸, OC(=O)OR¹⁸, C(=O)OR¹⁸, C(=O)NR₂¹⁸, PO₃R₂¹⁸, SO₂R¹⁸, NHC(=O)R¹⁸, NHC(=O)NHR¹⁸ and NHC(=S)NHR¹⁸; and

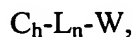
R¹⁸ is independently selected at each occurrence from the group: H and C₁-C₃ alkyl.

12. (Original) A MRI contrast agent of Claim 11, wherein:

R¹, R², R³ and R⁴ are independently selected at each occurrence from the group: H, CH₂COOH, CH₂PO₃H₂ and CH₂-heterocycle substituted with 0-3 R¹³; and

R¹³ is independently selected at each occurrence from the group: H, OR²³, OC(=O)OR²³, C(=O)OR²³, PO₃R¹⁸R²³, SR²³, SOR²³, SO₂R²³, CH₂OR²³, OH, NH₂, COOH, PO₃H₂, CH₂OH, CH₃ and SO₃H.

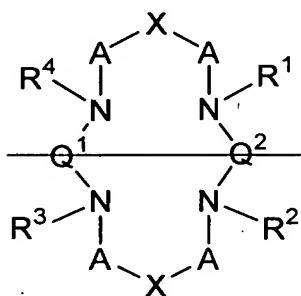
13. (Currently amended) A conjugate of the formula:



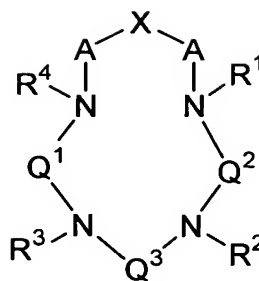
and pharmaceutically acceptable salts thereof,

wherein:

C_h is a chelator ~~of formulae (VII) or formula (VIII)~~:



(VII)



(VIII)

wherein:

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from the group: C_1 - C_{10} alkyl substituted with 0-5 R^5 , C_2 - C_{10} alkenyl substituted with 0-5 R^5 and aryl substituted with 0-5 R^5 ;

R^5 is independently elected at each occurrence from the group: H, $C(=O)OR^{18}$, C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} , aryl substituted with 0-5 R^{13} and heterocycle substituted with 0-5 R^{13} ;

X is selected from the group: BR^6R^7 , $C(=O)$, SiR^6R^7 , GeR^6R^7 , SnR^6R^7 , NR^8 , PR^9 , $P(=O)R^9$, $P(=S)R^9$, AsR^9 and $As(=O)R^9$;

A is selected from the group: CH_2 , NR^{10} and O;

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n$, wherein: n is 2-5;

R^6 and R^7 are independently selected from the group: C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

or alternatively, R^6 and R^7 may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^8 is selected from the group: OR^{14} , $C(=O)R^{14}$, $S(=O)_2R^{14}$ and $P(=O)(OR^{14})$;

R^9 is selected from the group: OR^{14} , $NR^{15}R^{16}$ and $CH_2NR^{15}R^{16}$;

R^{10} , R^{11} and R^{12} are independently selected from the group: H, C_1 - C_{10} alkyl substituted with 0-5 R^{17} , C_2 - C_{10} alkenyl substituted with 0-5 R^{17} and aryl substituted with 0-3 R^{17} ;

R^{13} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, CH_2OR^{18} , CH_3 , $NHC(=S)NHR^{18}$ and a bond to L_n ;

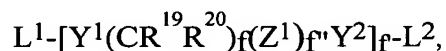
R^{14} , R^{15} and R^{16} are independently selected from the group: hydrogen, C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

or, alternatively, two R^{14} or R^{15} and R^{16} may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, $NHC(=S)NHR^{18}$ and a bond to L_n ;

R^{18} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl, phenyl and a bond to L_n ;

L_n is a linking group of formula:



wherein:

L^1 is $-[(CH_2)_gZ^1]_{g'}-(CR^{19}R^{20})_{g''}-$;

L^2 is $-(CR^{19}R^{20})_{g''}-[Z^1(CH_2)_g]_{g'}$;

g is independently 0-10;

g' is independently 0-1;

g'' is independently 0-10;

f is independently 0-10;

f' is independently 0-10;

f'' is independently 0-1;

Y^1 and Y^2 , at each occurrence, are independently selected from the group: a bond, O, NR^{20} , $C=O$, $C(=O)O$, $OC(=O)O$, $C(=O)NH-$, $C=NR^{20}$, S, SO, SO_2 , $NHC(=O)$, $(NH)_2C(=O)$ and $(NH)_2C=S$;

R^{19} and R^{20} are independently selected at each occurrence from the group: H, C_1 - C_{10} alkyl substituted with 0-5 R^{21} and alkaryl wherein the aryl is substituted with 0-5 R^{21} ;

R^{21} is independently selected at each occurrence from the group: NHR^{22} , $C(=O)R^{22}$, $OC(=O)R^{22}$, $OC(=O)OR^{22}$, $C(=O)OR^{22}$, $C(=O)NR_2^{22}$, -CN, SR^{22} , SOR^{22} , SO_2R^{22} , $NHC(=O)R^{22}$, $NHC(=O)NHR^{22}$, $NHC(=S)NHR^{22}$ and a bond to W;

R^{22} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl, phenyl and a bond to W; and

W is a biologically active molecule selected from the group: IIb/IIIa receptor ligands, fibrin binding peptides, leukocyte binding peptides, chemotactic peptides, somatostatin analogs, selectin binding peptides, vitronectin receptor antagonists and tyrosine kinase inhibitors;

~~with the proviso that when said chelator is of formula (VII) and X is $P(=O)R^9$, A is not CH_2 .~~

14. (Currently amended) A conjugate of Claim 13, wherein:

~~X is selected from the group: NR^8 , PR^9 and $P(=O)R^9$;~~

~~A is CH_2 ;~~

~~R^8 is selected from the group: OR^{23} , OR^{14} , $C(=O)R^{14}$ and $S(=O)_2R^{14}$;~~

R^9 is $CH_2NR^{15}R^{16}$;

g is independently 0-5;

g" is independently 0-5;

f is independently 0-5;

f' is independently 0-5;

Y^1 and Y^2 , at each occurrence, are independently selected from the group: a bond, O, NR^{20} , C=O, $C(=O)O$, $OC(=O)O$, $C(=O)NH-$, SO, SO_2 , $NHC(=O)$, $(NH)_2C(=O)$ and $(NH)_2C=S$; and

R^{21} is independently selected at each occurrence from the group: NHR^{22} , $C(=O)R^{22}$, $OC(=O)R^{22}$, $OC(=O)OR^{22}$, $C(=O)OR^{22}$, $C(=O)NR_2^{22}$, SO_2R^{22} , $NHC(=O)R^{22}$, $NHC(=O)NHR^{22}$, $NHC(=S)NHR^{22}$ and a bond to W.

15. (Currently amended) A conjugate of Claim 14 13 wherein:

~~Ch is a chelator of formula (VIII);~~

X is P(=O)OH;

~~A is CH₂;~~

Q¹, Q², and Q³ are independently -(CR¹¹R¹²)_n, wherein: n is 2 or 3;

R¹¹ and R¹² are independently selected from the group: H, C₁-C₅ alkyl substituted with 0-3 R¹⁷ and aryl substituted with 0-1 R¹⁷;

R¹⁷ is independently selected at each occurrence from the group: H, OH, NHR¹⁸, C(=O)R¹⁸, OC(=O)R¹⁸, OC(=O)OR¹⁸, C(=O)OR¹⁸, C(=O)NR₂¹⁸, PO₃R₂¹⁸, SO₂R¹⁸, NHC(=O)R¹⁸, NHC(=O)NHR¹⁸ and NHC(=S)NHR¹⁸; and

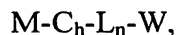
R¹⁸ is independently selected at each occurrence from the group: H and C₁-C₃ alkyl.

16. (Original) A conjugate of Claim 15, wherein:

R¹, R², R³ and R⁴ are independently selected at each occurrence from the group: H, CH₂COOH, CH₂PO₃H₂ and CH₂-heterocycle substituted with 0-3 R¹³; and

R¹³ is independently selected at each occurrence from the group: H, OH, NH₂, COOH, PO₃H₂, CH₂OH, CH₃ and SO₃H.

17. (Currently amended) A radiopharmaceutical of the formula:

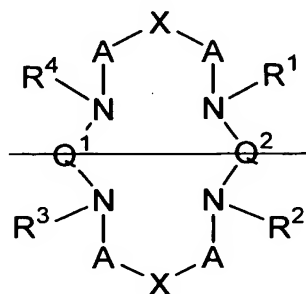


and pharmaceutically acceptable salts thereof,

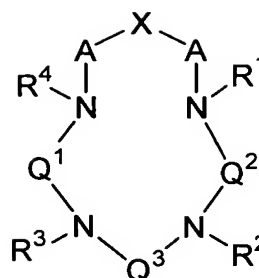
wherein,

M is selected from the group: ⁶⁴Cu, ⁶⁷Cu, ⁶⁷Ga, ⁶⁸Ga, ^{99m}Tc, ¹¹¹In, ⁹⁰Y, ¹⁴⁹Pr, ¹⁵³Sm, ¹⁵⁹Gd, ¹⁶⁶Ho, ¹⁶⁹Yb, ¹⁷⁷Lu, ¹⁸⁶Re and ¹⁸⁸Re;

C_h is a chelator of ~~formulae (IX)~~ or formula (X):



(IX)



(X)

wherein:

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from the group: C_1 - C_{10} alkyl substituted with 0-5 R^5 , C_2 - C_{10} alkenyl substituted with 0-5 R^5 and aryl substituted with 0-5 R^5 ;

R^5 is independently elected at each occurrence from the group: H, $C(=O)OR^{18}$, $C(=O)OR^{23}$, C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} , aryl substituted with 0-5 R^{13} and heterocycle substituted with 0-5 R^{13} ;

~~X is selected from the group: BR^6R^7 , $C(=O)$, SiR^6R^7 , GeR^6R^7 , SnR^6R^7 , NR^8 , PR^9 , $P(=O)R^9$, $P(=S)R^9$, AsR^9 and $As(=O)R^9$;~~

~~A is selected from the group: CH_2 , NR^{10} and O;~~

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n$, wherein: n is 2-5;

~~R^6 and R^7 are independently selected from the group: C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;~~

~~or alternatively, R^6 and R^7 may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;~~

~~R^8 is selected from the group: OR^{23} , OR^{14} , $C(=O)R^{14}$, $S(=O)_2R^{14}$ and $P(=O)(OR^{14})$;~~

R^9 is selected from the group: OR^{14} , $NR^{15}R^{16}$ and $CH_2NR^{15}R^{16}$;

R^{10} , R^{11} and R^{12} are independently selected from the group: H, C_1 - C_{10} alkyl substituted with 0-5 R^{17} , C_2 - C_{10} alkenyl substituted with 0-5 R^{17} and aryl substituted with 0-3 R^{17} ;

R^{13} is independently selected at each occurrence from the group: H, OH, OR^{23} , NHR^{18} , $C(=O)R^{18}$, $OC(=O)OR^{23}$, $OC(=O)R^{18}$, $C(=O)OR^{23}$, $OC(=O)OR^{18}$,

$C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, $PO_3R^{18}R^{23}$, SR^{18} , SR^{23} , SOR^{18} , SO_2R^{18} , SOR^{23} , SO_2R^{23} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, CH_2OR^{18} , CH_2OR^{23} , CH_3 , $NHC(=S)NHR^{18}$ and a bond to L_n ;

R^{14} , R^{15} and R^{16} are independently selected from the group: C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

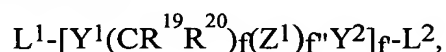
or, alternatively, two R^{14} or R^{15} and R^{16} may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, $NHC(=S)NHR^{18}$ and a bond to L_n ;

R^{18} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl, phenyl and a bond to L_n ;

R^{23} is a bond to the metal M;

L_n is a linking group of formula:



wherein:

L^1 is $-[(CH_2)_gZ^1]_{g'}-(CR^{19}R^{20})_{g''}-$;

L^2 is $-(CR^{19}R^{20})_{g''}-[Z^1(CH_2)_g]_{g'}$;

g is independently 0-10;

g' is independently 0-1;

g'' is independently 0-10;

f is independently 0-10;

f' is independently 0-10;

f'' is independently 0-1;

Y^1 and Y^2 , at each occurrence, are independently selected from the group: a bond, O, NR^{20} , $C=O$, $C(=O)O$, $OC(=O)O$, $C(=O)NH-$, $C=NR^{20}$, S, SO, SO_2 , $NHC(=O)$, $(NH)_2C(=O)$ and $(NH)_2C=S$;

R^{19} and R^{20} are independently selected at each occurrence from the group: H, C_1 - C_{10} alkyl substituted with 0-5 R^{21} and alkaryl wherein the aryl is substituted with 0-5 R^{21} ;

R^{21} is independently selected at each occurrence from the group: NHR^{22} , $C(=O)R^{22}$, $OC(=O)R^{22}$, $OC(=O)OR^{22}$, $C(=O)OR^{22}$, $C(=O)NR_2^{22}$, -CN, SR^{22} , SOR^{22} , SO_2R^{22} , $NHC(=O)R^{22}$, $NHC(=O)NHR^{22}$, $NHC(=S)NHR^{22}$ and a bond to W;

R^{22} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl, phenyl and a bond to W; and

W is a biologically active molecule selected from the group: IIb/IIIa receptor ligands, fibrin binding peptides, leukocyte binding peptides, chemotactic peptides, somatostatin analogs, selectin binding peptides, vitronectin receptor antagonists and tyrosine kinase inhibitors;

~~with the proviso that when said chelator is of formula (IX) and X is $P(=O)R^9$, A is not CH_2 .~~

18. (Currently amended) A radiopharmaceutical of Claim 17, wherein:

~~X is selected from the group: NR^8 , PR^9 and $P(=O)R^9$;~~

~~A is CH_2 ;~~

~~R^8 is selected from the group: OR^{23} , OR^{14} , $C(=O)R^{14}$ and $S(=O)_2R^{14}$;~~

R^9 is $CH_2NR^{15}R^{16}$;

g is independently 0-5;

g" is independently 0-5;

f is independently 0-5;

f is independently 0-5;

Y^1 and Y^2 , at each occurrence, are independently selected from the group: a bond, O, NR^{20} , C=O, $C(=O)O$, $OC(=O)O$, $C(=O)NH-$, SO, SO_2 , $NHC(=O)$, $(NH)_2C(=O)$ and $(NH)_2C=S$; and

R^{21} is independently selected at each occurrence from the group: NHR^{22} , $C(=O)R^{22}$, $OC(=O)R^{22}$, $OC(=O)OR^{22}$, $C(=O)OR^{22}$, $C(=O)NR_2^{22}$, SO_2R^{22} , $NHC(=O)R^{22}$, $NHC(=O)NHR^{22}$, $NHC(=S)NHR^{22}$ and a bond to W.

19. (Currently amended) A radiopharmaceutical of Claim ~~18~~ 17, wherein:

~~Ch is a chelator of formula (X);~~

X is P(=O)OH;

~~A is CH₂;~~

Q¹, Q², and Q³ are independently -(CR¹¹R¹²)_n⁻, wherein: n is 2 or 3;

R¹¹ and R¹² are independently selected from the group: H, C₁-C₅ alkyl substituted with 0-3 R¹⁷ and aryl substituted with 0-1 R¹⁷;

R¹⁷ is independently selected at each occurrence from the group: H, OH, NHR¹⁸, C(=O)R¹⁸, OC(=O)R¹⁸, OC(=O)OR¹⁸, C(=O)OR¹⁸, C(=O)NR₂¹⁸, PO₃R₂¹⁸, SO₂R¹⁸, NHC(=O)R¹⁸, NHC(=O)NHR¹⁸ and NHC(=S)NHR¹⁸; and

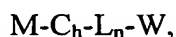
R¹⁸ is independently selected at each occurrence from the group: H and C₁-C₃ alkyl.

20. (Original) A radiopharmaceutical of Claim 19, wherein:

R¹, R², R³ and R⁴ are independently selected at each occurrence from the group: H, CH₂COOH, CH₂PO₃H₂ and CH₂-heterocycle substituted with 0-3 R¹³; and

R¹³ is independently selected at each occurrence from the group: H, OR²³, OC(=O)OR²³, C(=O)OR²³, PO₃R¹⁸R²³, SR²³, SOR²³, SO₂R²³, CH₂OR²³, OH, NH₂, COOH, PO₃H₂, CH₂OH, CH₃ and SO₃H.

21. (Currently amended) A MRI contrast agent of the formula:

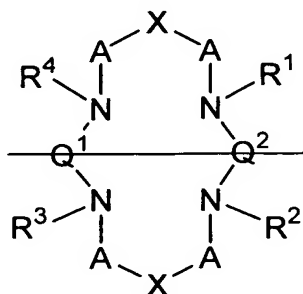


and pharmaceutically acceptable salt thereof,

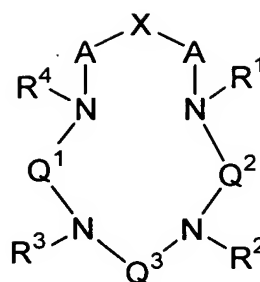
wherein:

M is a paramagnetic metal ion of atomic number selected from the group: 21-29, 42-44 and 58-70;

C_h is a chelator of ~~formulae (XI) or~~ formula (XII):



(XI)



(XII)

wherein:

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from the group: C_1 - C_{10} alkyl substituted with 0-5 R^5 , C_2 - C_{10} alkenyl substituted with 0-5 R^5 and aryl substituted with 0-5 R^5 ;

R^5 is independently elected at each occurrence from the group: H, $C(=O)OR^{18}$, $C(=O)OR^{23}$, C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} , aryl substituted with 0-5 R^{13} and heterocycle substituted with 0-5 R^{13} ;

X is selected from the group: BR^6R^7 , $C(=O)$, SiR^6R^7 , GeR^6R^7 , SnR^6R^7 , NR^8 , PR^9 , $P(=O)R^9$, $P(=S)R^9$, AsR^9 and $As(=O)R^9$;

A is selected from the group: CH_2 , NR^{10} and O ;

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n$, wherein: n is 2-5;

R^6 and R^7 are independently selected from the group: C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

or alternatively, R^6 and R^7 may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^8 is selected from the group: OR^{23} , OR^{14} , $C(=O)R^{14}$, $S(=O)_2R^{14}$ and $P(=O)(OR^{14})$;

R^9 is selected from the group: OR^{14} , $NR^{15}R^{16}$ and $CH_2NR^{15}R^{16}$;

R^{10} , R^{11} and R^{12} are independently selected from the group: H, C_1 - C_{10} alkyl substituted with 0-5 R^{17} , C_2 - C_{10} alkenyl substituted with 0-5 R^{17} and aryl substituted with 0-3 R^{17} ;

R^{13} is independently selected at each occurrence from the group: H, OH, OR^{23} , NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $OC(=O)OR^{23}$, $C(=O)OR^{18}$,

$C(=O)OR^{23}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, $PO_3R^{18}R^{23}$, SR^{18} , SR^{23} , SOR^{18} , SO_2R^{18} , SOR^{23} , SO_2R^{23} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, CH_2OR^{18} , CH_2OR^{23} , CH_3 , $NHC(=S)NHR^{18}$ and a bond to L_n ;

R^{14} , R^{15} and R^{16} are independently selected from the group: C_1 - C_{10} alkyl substituted with 0-5 R^{13} , C_2 - C_{10} alkenyl substituted with 0-5 R^{13} and aryl substituted with 0-5 R^{13} ;

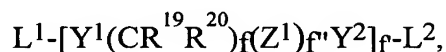
or, alternatively, two R^{14} or R^{15} and R^{16} may be taken together to form a transannular bridge, said bridge selected from the group: C_3 - C_{10} alkyl substituted with 0-5 R^{13} and ortho-aryl substituted with 0-3 R^{13} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SR^{18} , SOR^{18} , SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$, $NHC(=S)NHR^{18}$ and a bond to L_n ;

R^{18} is independently selected at each occurrence from the group: H, C_1 - C_6 alkyl, benzyl, phenyl and a bond to L_n ;

R^{23} is a bond to the metal M;

L_n is a linking group of formula:



wherein:

L^1 is $-[(CH_2)_gZ^1]_{g'}-(CR^{19}R^{20})_{g''}-$;

L^2 is $-(CR^{19}R^{20})_{g''}-[Z^1(CH_2)_g]_{g'}-$;

g is independently 0-10;

g' is independently 0-1;

g'' is independently 0-10;

f is independently 0-10;

f' is independently 0-10;

f'' is independently 0-1;

Y^1 and Y^2 , at each occurrence, are independently selected from the group: a bond, O, NR^{20} , C=O, C(=O)O, OC(=O)O, C(=O)NH-, C=NR²⁰, S, SO, SO₂, NHC(=O), (NH)₂C(=O) and (NH)₂C=S;

R^{19} and R^{20} are independently selected at each occurrence from: H, C₁-C₁₀ alkyl substituted with 0-5 R^{21} and alkaryl wherein the aryl is substituted with 0-5 R^{21} ;

R^{21} is independently selected at each occurrence from the group: NHR^{22} , C(=O) R^{22} , OC(=O) R^{22} , OC(=O)OR²², C(=O)OR²², C(=O)NR₂²², -CN, SR²², SOR²², SO₂R²², NHC(=O) R^{22} , NHC(=O)NHR²², NHC(=S)NHR²² and a bond to W;

R^{22} is independently selected at each occurrence from the group: H, C₁-C₆ alkyl, benzyl, phenyl and a bond to W; and

W is a biologically active molecule selected from the group: IIb/IIIa receptor ligands, fibrin binding peptides, leukocyte binding peptides, chemotactic peptides, somatostatin analogs, selectin binding peptides, vitronectin receptor antagonists and tyrosine kinase inhibitors

~~with the proviso that when said chelator is of formula (XI) and X is P(=O) R^9 , A is not CH_2 .~~

22. (Currently amended) A MRI contrast agent of Claim 21, wherein:

~~X is selected from the group: NR^8 , PR^9 and P(=O) R^9 ;~~

~~A is CH_2 ;~~

~~R^8 is selected from the group: OR²³, OR¹⁴, C(=O) R^{14} and S(=O)₂ R^{14} ;~~

R^9 is $CH_2NR^{15}R^{16}$;

g is independently 0-5;

g" is independently 0-5;

f is independently 0-5;

f' is independently 0-5;

Y^1 and Y^2 , at each occurrence, are independently selected from the group: a bond, O, NR^{20} , C=O, C(=O)O, OC(=O)O, C(=O)NH-, SO, SO₂, NHC(=O), (NH)₂C(=O) and (NH)₂C=S; and

R^{21} is independently selected at each occurrence from the group selected from the group: NHR^{22} , $C(=O)R^{22}$, $OC(=O)R^{22}$, $OC(=O)OR^{22}$, $C(=O)OR^{22}$, $C(=O)NR_2^{22}$, SO_2R^{22} , $NHC(=O)R^{22}$, $NHC(=O)NHR^{22}$, $NHC(=S)NHR^{22}$ and a bond to W.

23. (Currently amended) A MRI contrast agent of Claim ~~22~~ 21, wherein:

~~Ch is a chelator of formula (XII);~~

X is $P(=O)OH$;

~~A is CH_2 ;~~

Q^1 , Q^2 , and Q^3 are independently $-(CR^{11}R^{12})_n-$, wherein n: is 2 or 3;

R^{11} and R^{12} are independently chosen from the group: H, C_1-C_5 alkyl substituted with 0-3 R^{17} and aryl substituted with 0-1 R^{17} ;

R^{17} is independently selected at each occurrence from the group: H, OH, NHR^{18} , $C(=O)R^{18}$, $OC(=O)R^{18}$, $OC(=O)OR^{18}$, $C(=O)OR^{18}$, $C(=O)NR_2^{18}$, $PO_3R_2^{18}$, SO_2R^{18} , $NHC(=O)R^{18}$, $NHC(=O)NHR^{18}$ and $NHC(=S)NHR^{18}$; and

R^{18} is independently selected at each occurrence from the group: H and C_1-C_3 alkyl.

24. (Original) A MRI contrast agent of Claim 23, wherein:

R^1 , R^2 , R^3 and R^4 are independently selected at each occurrence from the group: H, CH_2COOH , $CH_2PO_3H_2$, CH_2 -heterocycle substituted with 0-3 R^{13} ; and

R^{13} is independently selected at each occurrence from the group: H, OR^{23} , $OC(=O)OR^{23}$, $C(=O)OR^{23}$, $PO_3R^{18}R^{23}$, SR^{23} , SOR^{23} , SO_2R^{23} , CH_2OR^{23} , OH, NH_2 , $COOH$, PO_3H_2 , CH_2OH , CH_3 and SO_3H .